ATKINSON CONSTRUCTION
a subsidiary of Clark Construction Group, LLC

Transmittal

Project [150093] - SR-16 West Bound Nalley Valley **View Date** 5/10/2010

Atkinson Construction
1907 S. Tacoma Way
Tacoma, WA 98409

Transmittal No. 150093-01742

To Tyron Bardwell WSDOT 11203 Bridgeport Way SW MS: WT-12 Lakewood, WA 98499-3002 Phone: (253) 589-6100 Fax: (253) 589-6101	**Date** 5/10/2010 **Items listed are being sent** ☐ Enclosed ☑ Under Separate Cover **Via** Hand Delivered
From Mr Sam Hoelscher (Atkinson Construction)	
Subject Submittal 489.4 - Fire Supression System Shop Drawings	
cc Ms. Janet Lee (WSDOT)	

We are transmitting the following to you:

☐ Product Data ☐ Samples ☑ Shop Drawings ☐ O&M Manuals ☐ Plans
☐ Architectural Drawings ☐ Letters ☐ Specifications ☐ Prints ☐ Addenda
☐ Engineering Drawings ☐ Change Orders ☑ Submittal

Submittals

Pkg. No./Rev.	Item No./Rev.	Description	Copies	Reason	Action	Due	Response
Fireshield.0	00489.4	Fire Suppression System Shop Drawings		For Approval			

Remarks **Air / Vacuum Valves**

WSDOT recommends reducing the offset from 3'-11" to 3'-0" offset on NW from spans 8-11 . We have already placed the intermediate diaphragms with the blockouts at an offset of 3'-11" at spans 8 and 9. Recommend to maintain the 3'-11" offset. Please advise.

Seismic Assemblies

WSDOT has changed contract plans to upsize 200' of 6" pipe to 8" to compensate for headloss through the seismic assemblies. In NW Spans 6 – 9, 10" blockouts have already been placed and only provide a 2" clearance around the 8"pipe. The FSS

piping is laterally and longitudinally braced at each diaphragm blockout to restrict all movement. Future sleeves will provide 4" clearance. Will the 2" clearance for the 8"FSS braced piping on NW Spans 6-9 be sufficient? Please advise.

Received By Printed Name Date

Linked Documents

Document Type	Document	Open	Description	Date	Size (KB)
Doc	150093-05026		Submittal Item 00489.4 - Fire Supression System...	5/10/2010	12183.54
Sub. Item	00489.4		Fire Suppression System Shop Drawings	5/10/2010	

FIRESHIELD
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Atkinson Construction
@ HWY 16 Project Site
Tacoma, WA
Attn: Curtis Hamilton

May 7th, 2010

RE: I-5 / SR 16 Interchange – Nalley Valley Bridge
Fire Standpipe System: Submittal Review

Curtis,

We're in receipt of the reviewed submittals of the fire standpipe system for Nalley Valley Bridge as well as the comments dated 5/5/10. We take no major objections to the reviewer's comments. There are a few corrections that we are using this letter to explain. The changes have been made to the drawings and are being submitted with this letter.

Air/Vacuum Valve

We have confirmed clearance through the top of the Air Vac assemblies below the bottom of the Longitudinal Seismic Restrainers. No changes to the restrainers are necessary to accommodate the FSS Air Vac assemblies. In the cases marked on the drawing we were able to make changes to the assembly. One alternative that we used for NW Pier 12 between Girders A and B was to come off the side of the 8"FSS piping with a 3" welded grooved outlet. From there we utilized a 3" grooved 90 looking up and a 3"flanged groove where the 3"flanged Air Vac assembly sits. Use of the 'side outlet' moved the Air Vac assembly to the side of the restrainer while keeping the overall assembly height below the restrainer.

Between Girders 12N-B and 12N-C we calculated the top of the Air Vac assembly at 1'-8" below the deck while the bottom of the restrainer assembly was at 1'-7" below the deck. Thus a 1" clearance is available. Additionally, this Air Vac assembly is just off to the side of the restrainer as well.

The Air Vac assembly at SW Pier 15N was checked and there is sufficient clearance below the restrainer. Again, the Air Vac assembly is off to the side here too.

Proposed Hanger Details No.1 and 2 (Prestressed Girder Sections of the Bridge)

We accept the conditions:

- The rod shall be sized as ¾" instead of ½".
- The HDG clevis hanger shall have a HDG cross bolt attachment.
- The Tolco Fig.981 shall be HDG finish.
- The assemblies shall attach to the underside of the deck with Tolco Fig.909 HDG Swivel Sway Brace Attachments bolted into Anvil Fig 282 concrete inserts and nuts (typical to all hangers).

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Lateral and Longitudinal Brace Structure Attachments and Structure Attachment Fastener Sizing

The Tolco Fig.910 Brace Structure Attachments has a 9/16"hole for attachment. It does not accommodate a 5/8" bolt. (Product data sheet attached). The ½"bolt into an Anvil Fig.282 concrete insert offers 1130 lb max load. The 5/8" bolt only offers 10 lbs more at 1140 lb max load. Because of the material limitations and the minimal value added to the strength we recommend using the ½"bolts as designed.

The longitudinal bracing attachments to the diaphragms using a post anchoring ½"x 2 1/4" deepHilti KwikBolt3 provides tension strength of 1125 lbs. The ¾" would provide more but again, the Tolco 910 will not accommodate it. We recommend using a deeper ½"KwikBolt3 such as the 3 1/2" deep bolt which affords 1895 lbs, if needed.

We have confirmed that the lateral bracing shall be located adjacent to each hose outlet tee and at every other flexible grooved joint coupling per NFPA-13. We've updated the details to reflect the suggestion from the review.

SW Longitudinal Bracing

We have added the longitudinal bracing in the SW pre-cast line as suggested. Drawings are updated.

Seismic Assemblies

We've made the following changes as requested:

- The 8X6 Concentric reducers have been moved 200 feet east of the original design locations
- The expansion and contraction capability is 8" laterally and longitudinally from the neutral position.
- We've relocated the seismic assembly at NW Pier 8 to the opposite side of the pier from the hose outlet.
- As detailed in the review comments on the drawings, we've added bracing near both ends of the seismic separation assemblies.

An expansion assembly was added at Pier 5 per the contract drawings.

With this review we believe we've met all the requirements and requested changes for approval of the drawings. Please review and approve along with the outstanding RAM's.

Sincerely,
Fireshield, Inc.

Andrew Moren
President

Fig. 910 - Swivel Sway Brace Fitting

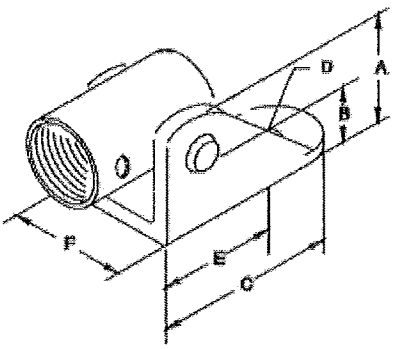
Component of State of California OSHPD Approved Seismic Restraints System

Size Range — 1" and 1¼" bracing pipe. For brace pipe sizes larger than 1¼", use TOLCO Fig. 980.

Material — Carbon Steel

Function — For bracing pipe against sway and seismic disturbances. The building attachment component of a sway brace system; the Fig. 910 is used in conjunction with the Fig. 1001, Fig. 1000 or with a Fig. 4A Pipe Clamp and joined together with a brace pipe per NFPA 13.

Features — This product's design incorporates a **concentric** attachment opening which is critical to the performance of structural seismic connections. NFPA 13 (1999 Edition) Table 6-4.5.9 indicates clearly that fastener table load values are based only on concentric loading. Universal swivel design allows Fig. 910 to be attached at any surface angle. All steel construction. NFPA 13 (1999 Edition) Table 6-4.5.8: 1" Schedule 40 bracing pipe maximum 7'0". 1¼" Schedule 40 bracing pipe maximum 9'0".

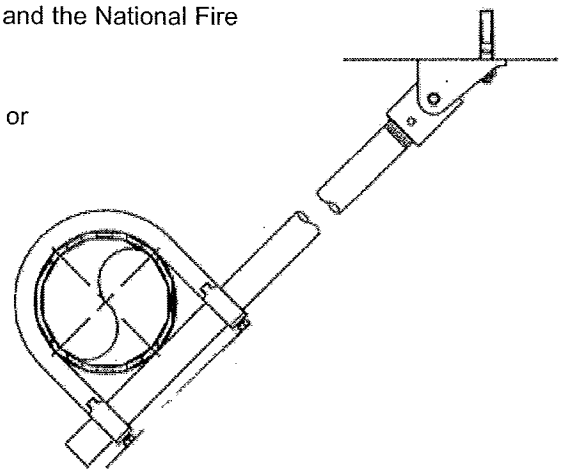


Approvals — Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)**. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.

Note — The Fig. 910 Swivel Attachment and the Fig. 1001, Fig. 1000 , or Fig. 4A Pipe Clamp make up a sway brace system of (**UL**) Listed attachments and bracing materials which satisfies the requirements of Underwriters' Laboratories and the National Fire Protection Association (**NFPA**).

Finish — Plain

Note — Available in Electro-Galvanized and HDG finish or Stainless Steel materials.



Order By — Figure number, pipe size and finish.

Note — Specific weight load conditions may require more than one fastener to the building surface. Sway brace attachments may be ordered with multiple and/or larger fastener mounting holes. Consult the factory. The Fig. 910 is precision manufactured to perform its function as a critical component of a complete bracing assembly.

To ensure performance, the UL Listing requires that the Fig. 910 must be used only with other TOLCO bracing products.

Dimensions • Weights

Pipe Size	A	B	C	D Hole Size	E	F	Max. Design Load Lbs.	Approx. Wt./100
1	2	1 1/2	3	9/16	2 5/16	2	2015	88
1¼	1 3/16	1 5/16	3	9/16	2 5/16	2 5/16	2015	99

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